

**IN THE CLAIMS:**

Please amend the above-identified patent application, specifically claims 27 and 37; and add claims 56-69, as follows:

*Sub 17*  
1. (Previously amended) A total shoulder arthroplasty apparatus for recreating an anatomic proximal humeral configuration, comprising:  
a stemless humeral head for coupling to a cut humeral surface, wherein the humeral head includes a base having a rotationally-stabilizing base extension protruding therefrom including multiple fins for impaction into a cancellous region of the cut humeral surface.

2. (Cancelled)

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3. (Previously amended) The apparatus of Claim 1, wherein one or more of said multiple fins are substantially planar.

4. (Original) The apparatus of Claim 1, wherein the protruding base extension includes at least two fins formed to have a cruciform shape.

5. (Previously amended) The apparatus of Claim 1, wherein the shape of one or more of said multiple fins is plano-triangular.

6. (Previously amended) The apparatus of Claim 3, wherein the protruding base extension further includes at least one linear fin.

7. (Original) The apparatus of Claim 1, wherein the cancellous region said base extension protrudes into is non-intramedullary.

8. (Previously amended) A total shoulder arthroplasty apparatus for recreating an anatomic proximal humeral configuration, comprising:

a stemless humeral head for coupling to a previously cut humeral surface, wherein the humeral head includes a base having a non stem-bearing stabilizing base extension including multiple fins protruding therefrom for impaction into a cancellous region of the cut humeral surface.

9. (Original) The apparatus of Claim 8, wherein the protruding base extension includes two or more linear extensions for rotational stabilization.

10. (Original) The apparatus of any of Claims 1 or 8, wherein the periphery of the humeral head is formed to match cortical margins of the cut humeral surface.

11. (Original) The apparatus of any of Claims 1 or 8, wherein the humeral head is attached to the humeral surface using an adhesive.

12. (Original) The apparatus of Claim 11, wherein the adhesive is surgical cement.

13. (Original) The apparatus of any of Claims 1 or 8, wherein the humeral head is attached to the humeral surface by press-fitting.

14. (Original) The apparatus of any of Claims 1 or 8, wherein the periphery of the base of the humeral head is formed to match a specific shape and size of the anatomic neck of a specific humeral surface.

15. (Original) The apparatus of any of Claims 1 or 8, further comprising a template punch inserted into the cut humeral surface, wherein the base extension is a total or partial male complement to the female template punch.

16. (Previously amended) A total shoulder arthroplasty apparatus for recreating an anatomic proximal humeral configuration, comprising:

a stemless humeral head for coupling to a cut humeral surface, wherein the humeral head includes a base having a rotationally-stabilizing base extension protruding therefrom including multiple fins for impaction into a cancellous, non-intramedullary region of the cut humeral surface.

17. (Original) The apparatus of Claim 16, wherein the periphery of the humeral head is formed to match cortical margins of the cut humeral surface.

18. (Original) The apparatus of Claim 16, wherein the humeral head is attached to the humeral surface using an adhesive.

19. (Original) The apparatus of Claim 18, wherein the adhesive is surgical cement.

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20. (Original) The apparatus of Claim 16, wherein the humeral head is attached to the humeral surface by press-fitting.

21. (Original) The apparatus of Claim 16, wherein the periphery of the base of the humeral head is formed to match a specific shape and size of the anatomic neck of a specific humeral surface.

22. (Original) The apparatus of Claim 16, further comprising a template punch inserted into the cut humeral surface, wherein the base extension is a total or partial male complement to the female template punch.

23. (Previously amended) A total shoulder arthroplasty apparatus for recreating an anatomic proximal humeral configuration, comprising:

a humeral head for coupling to a cut humeral surface, wherein the humeral head includes a base having a rotationally-stabilizing base extension protruding therefrom including multiple fins for impaction into a cancellous region of the cut humeral surface, and wherein the base extension is confined to protrude only into a ball region of the

humerus, to which the humeral head couples, and which is above an elongate region of the humerus.

24. (Previously amended) A total shoulder arthroplasty apparatus for recreating an anatomic proximal humeral configuration, comprising:

a humeral head for coupling to a cut humeral surface, wherein the humeral head includes a base having a rotationally-stabilizing base extension protruding therefrom including multiple fins for impaction into a cancellous region of the cut humeral surface, and wherein the extension is nonintrusive of an elongate humeral region below a humeral ball region including the humeral head.

25. (Previously amended) A total shoulder arthroplasty method for recreating an anatomic proximal humeral configuration, comprising the steps of:

preparing a stemless humeral head having a base including a stabilizing base extension including multiple fins for efficient rotational stabilization of the humeral head on a cut humeral surface for coupling with the cut humeral surface;

preparing a humeral surface for coupling the humeral head thereto, including cutting the humeral surface to reveal a cancellous interior; and

coupling the humeral head to the humeral surface, thereby recreating the anatomic proximal humeral configuration.

26. (Cancelled)

27. (Currently amended) The method of Claim 26, 25, wherein one or more of said multiple fins are substantially planar in shape.

28. (Original) The method of Claim 27, wherein the planar shape of the one or more fins is triangular.

29. (Original) The method of Claim 25, wherein the stabilizing base extension includes two fins formed to have a cruciform shape.

30. (Original) The method of Claim 25, wherein the protruding base extension further includes at least one linear fin.

31. (Previously amended) A total shoulder arthroplasty method for recreating an anatomic proximal humeral configuration, comprising the steps of:

preparing a stemless humeral head having a base including a non stem-bearing stabilizing base extension including multiple fins for rotational stabilization of the humeral head on a cut humeral surface for coupling to the cut humeral surface;

preparing a humeral surface for coupling the humeral head thereto, including cutting the humeral surface to reveal a cancellous interior; and

coupling the humeral head to the humeral surface, thereby recreating the anatomic proximal humeral configuration.

32. (Original) The method of Claim 31, wherein the base extension includes two or more linear extensions.

33. (Original) The method of any of Claims 25 or 31, wherein the coupling step includes the step of impacting the base extension into the cancellous of the cut humeral surface, wherein the periphery of the humeral head rests on the cortical margins of the humeral surface following the coupling.

34. (Original) The method of any of Claims 25 or 31, wherein the coupling step includes the step of adhesively coupling the humeral head to the humeral surface.

35. (Original) The method of Claim 34, wherein the adhesive is surgical cement.

36. (Original) The method of any of Claims 25 or 31, wherein the coupling step includes the step of press-fitting the humeral head to the humeral surface.

37. (Currently amended) The method of any of Claims 25 or 31, ~~wherein the forming step includes the step of~~ further comprising selecting a shape and size of the periphery of the base of the humeral head from a variety of shapes and sizes for matching the specific shape and size of the anatomic neck of the cut humeral surface.

38. (Original) The method of any of Claims 25 or 31, further comprising the step of inserting a template punch into the cancellous of the cut humeral surface prior to performing the coupling step.

39. (Original) The method of Claim 38, wherein the base extension is a total or partial male complement to the female template punch.

40. (Original) The method of any of Claims 25 and 31, wherein the coupling step includes impacting the base extension of the humeral head to protrude only into a ball region of the humerus above an elongate region of the humerus.

41. (Original) The method of any of Claims 25 and 31, wherein the coupling step includes impacting the base extension of the humeral head nonintrusive to an elongate region of the humerus below a ball region of the humerus.

42. (Previously amended) A total shoulder arthroplasty method for recreating an anatomic proximal humeral configuration, comprising the steps of:

preparing a stemless humeral head having a base including a non stem-bearing stabilizing base extension including multiple fins for rotational stabilization of the humeral head on a cut humeral surface for coupling to the cut humeral surface;

preparing a humeral surface for coupling the humeral head thereto, including cutting the humeral surface to reveal a cancellous interior; and

coupling the humeral head to the humeral surface, thereby recreating the anatomic proximal humeral configuration, including impacting the base extension of the humeral head to protrude only into a ball region of the humerus above an elongate region of the humerus.

43. (Previously amended) A total shoulder arthroplasty method for recreating an anatomic proximal humeral configuration, comprising the steps of:

preparing a stemless humeral head having a base including a non stem-bearing stabilizing base extension including multiple fins for rotational stabilization of the humeral head on a cut humeral surface for coupling to the cut humeral surface;

preparing a humeral surface for coupling the humeral head thereto, including cutting the humeral surface to reveal a cancellous interior; and

coupling the humeral head to the humeral surface, thereby recreating the anatomic proximal humeral configuration, including impacting the base extension of the humeral head nonintrusive to an elongate region of the humerus below a ball region of the humerus.

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44-49. (Withdrawn)

50. (Previously amended) A total shoulder arthroplasty method for recreating an anatomic proximal humeral configuration, comprising the steps of:

preparing a stemless humeral head having a base including a non stem-bearing stabilizing base extension including multiple fins for rotational stabilization of the humeral head on a cut humeral surface for coupling to the cut humeral surface;

preparing a humeral surface for coupling the humeral head thereto, including cutting the humeral surface to reveal a cancellous interior; and

coupling the humeral head to the humeral surface, thereby recreating the anatomic proximal humeral configuration.

51. (Previously added) The method of any of Claims 25, 31 or 42-43 wherein said preparing step comprises the steps of:

surgically establishing an access to a humerus of a patient;

coupling a guide to the humerus, wherein the humeral head remains exposed;

positioning said guide to define a humeral surface; and

removing said humeral head by cutting along said humeral surface defined by said guide, whereby a precise humeral surface is revealed for attaching an artificial humeral head during said arthroplasty.

52. (Previously added) The method of Claim 51, further comprising the step of aligning said humeral surface with a glenoid version guide.

53. (Previously added) The method of Claim 51, further comprising the steps of: preparing for coupling to the cut humeral surface a stemless humeral head having a base including a non stem-bearing stabilizing base extension for rotational stabilization of the humeral head on a cut humeral surface; and coupling the humeral head to the humeral surface, thereby recreating the anatomic proximal humeral configuration.

54. (Previously reinstated) A method for performing a shoulder arthroplasty, comprising the steps of:

surgically establishing an access to a humerus of a patient;  
coupling a guide to the humerus, wherein the humeral head remains exposed;  
positioning said guide to define a humeral surface;  
removing said humeral head by cutting along said humeral surface defined by said guide, whereby a precise humeral surface is revealed for attaching an artificial humeral head during said arthroplasty;  
preparing for coupling to the cut humeral surface a stemless humeral head having a base including a non stem-bearing stabilizing base extension including multiple fins protruding therefrom for rotational stabilization of the humeral head on a cut humeral surface; and  
coupling the humeral head to the humeral surface, thereby recreating the anatomic proximal humeral configuration.

55. (Previously added) The method of Claim 54, further comprising the step of aligning said humeral surface with a glenoid version guide.



56. (New) A total shoulder arthroplasty apparatus for recreating an anatomical proximal humeral configuration, comprising:

a stemless combination of a template punch for coupling to a cut humeral surface and a humeral head for coupling with the cut humeral surface via the template punch, wherein the stemless combination includes a base having a rotationally stable base extension protruding therefrom including one or more fins for impaction into a cancellous region of the cut humeral surface.

57. (New) The apparatus of Claim 56, the cancellous region consisting of a non-intramedullary region.

58. (New) The apparatus of Claim 56, the one or more fins comprising multiple fins.

59. (New) The apparatus of Claim 58, the base extension comprising a total or partial male complement to a female template punch.

60. (New) The apparatus of Claim 56, the base extension comprising a total or partial male complement to a female template punch.

61. (New) The apparatus of Claim 56, the base extension being nonintrusive of an elongate humeral region below a humeral ball region including the humeral head.

62. (New) The apparatus of Claim 61, the base extension being confined to protrude only into a ball region of the humerus.

63. (New) A total shoulder arthroplasty method for recreating an anatomical proximal humeral configuration, comprising:  
preparing a stemless combination of a template punch and a humeral head, the combination including a base extension including one or more fins for efficient

rotational stabilization of the combination on a cut humeral surface for coupling with the cut humeral surface;

preparing a humeral surface for coupling the combination thereto, including cutting the humeral surface to reveal a cancellous interior; and

coupling the combination to the humeral surface including coupling the template punch to the humeral surface and coupling the humeral head to the humeral surface via the template punch.

64. (New) The method of Claim 63, the cancellous region consisting of a non-intramedullary region.

65. (New) The method of Claim 63, the one or more fins comprising multiple fins.

66. (New) The method of Claim 65, the base extension comprising a total or partial male complement to a female template punch.

67. (New) The method of Claim 63, the base extension comprising a total or partial male complement to a female template punch.

68. (New) The method of Claim 63, the base extension being nonintrusive of an elongate humeral region below a humeral ball region including the humeral head.

69. (New) The method of Claim 68, the base extension being confined to protrude only into a ball region of the humerus.